WHAT IS CLAIMED IS:

1. A scan head for use in a scanner for projecting light onto an object to be scanned, and for detecting light reflected from the object; the scan head having precisely two spaced light projectors and two spaced light detectors; wherein the projectors, when operating, operate in time-division multiplexed mode, and the detectors, when operating, each operate in synchrony to receive light reflected from both projectors.

2. A scan head as defined in Claim 1, wherein at least one of the projectors projects coded light.

3. An array of spaced coplanar scan heads for scanning respective portions of a target object, each said scan head having precisely two spaced light projectors and two spaced light detectors; wherein, in operation

a. the projectors within each said scan head operate in time-division multiplexed mode;

b. the detectors within each said scan head operate in synchrony to receive light reflected from both projectors within such scan head; and

c. the scan heads operate in a timed sequence selected to avoid interference between neighboring scan heads.

4. A scan head as defined in Claim 3, wherein at least one of the projectors projects coded light.

5. A scan head for use in a scanner for projecting light onto an object to be scanned, and for detecting light reflected from the object; the scan head having precisely two spaced projectors and two spaced detectors, wherein the detectors bracket the projectors.

6. A scan head as defined in Claim 5, wherein at least one of the projectors projects coded light.

7. A scan head for use in a scanner for projecting light onto an object to be scanned, and for detecting light reflected from the object, the scan head having two spaced detectors and at least one projector for projecting coded light onto the object, wherein the projector is located proximate to one of the detectors and remote from the other, so that in operation, separate scan data are obtained from each said detector, the data respectively representing a near field of view and a far field of view .

8. A scan head for use in a scanner for projecting light onto a target object to be scanned, and for detecting light reflected from the object, the scan head having two spaced projectors and two spaced detectors; wherein in operation, one of the projectors projects a coded light pattern onto the object and the detectors receive and detect light reflected from the object that is correlatable with at least a distinguishable part of the projected pattern, and the other of the projectors projects a fan of light onto the object.

9. A scan head as defined in Claim 8, wherein in operation, at least one of the detectors detects an image of the fan of light reflected from the target object and generate reflection data for at least one of the following purposes:

a. target edge detection of edges of the target object;

b. detection of other abrupt interruptions of the surface of the target object;

c. gray-scale imaging of the scanned surface of the target object;

d. selected color imaging of the scanned surface of the target object;

e. reflectivity compensation for balancing fan-of-light reflection data and coded-light reflection data.

10. Scanning apparatus for projecting coded light onto an object to be scanned, and for detecting light reflected from the object, comprising

a. a scan head having two spaced detectors and at least one projector for projecting coded light onto the object, wherein the projector is located proximate to one of the detectors and remote from the other, so that in operation, separate reflection data are obtained from each said detector, the data respectively representing a near

field of view and a far field of view; the detectors each providing an output representing the detected image at any time received by such detector; and wherein the coded light comprises a pattern comprised of symbols each characterized by two or more distinguishable characteristics of the projected radiation;

b. symbol edge detection means for detecting in the output from the detectors beginning and end edges of the said symbol characteristics; and

c. matching means for matching portions of the detected image with portions of the projected pattern using at least some of the detected symbol edges.

11. Scanning apparatus as defined in Claim 10, wherein the scan head has two projectors at least one of which in operation projects coded light onto the object, each said projector being proximate to an associated unique one of the detectors and remote from the other.

12. Scanning apparatus as defined in Claim 11, wherein the detectors bracket the projectors.

13. Scanning apparatus as defined in Claim 12, wherein in operation, both projectors project coded light onto the object.

14. Scanning apparatus as defined in Claim 12, wherein in operation, one of the projectors projects coded light onto the object, and the other of the projectors projects a fan of light onto the object.

15. Scanning apparatus as defined in Claim 12, wherein the pattern is comprised of symbols characterized by alternating light and dark portions of the projected pattern, and wherein the symbol edge detection means detects in the output from each said detector the rise times and fall times of portions of the output signal corresponding to the signal edges of sequential light and dark portions of the detected pattern, and the matching means matches portions of the detected reflected image with portions of the projected pattern using at least some of the detected symbol edges.

16. Scanning apparatus as defined in Claim 13 in which, in operation, one said projector projects a coded light pattern smaller in pitch than the pitch of the coded light pattern projected by the other said projector.

17. Scanning apparatus as defined in Claim 13 wherein the coded light projection pattern for the coded light projected by each said projector comprises three or more types of symbols, each said symbol having two discernibly different characteristics, the characteristics being respectively associated with discernibly different duty cycles for the symbol types, thereby to afford a basis for discerning the symbol type of each symbol in the pattern.

18. Scanning apparatus as defined in Claim 17 wherein the symbols are of equal length and each comprise a mark and a space, the duty cycle of the mark varying with the symbol type.

19. Scanning apparatus as defined in Claim 18 wherein the symbols are of three different types respectively having mark duty cycles of about 30%, about 50%, and about 70%.

20. Scanning apparatus for projecting light onto an object to be scanned, and for detecting light reflected from the object, comprising:

a. a scan head having two spaced detectors and at least one projector for projecting a coded light pattern onto the object, the detectors in operation each providing an output representative of the received reflected image at any time; wherein the projector is located proximate to one of the detectors and remote from the other, and wherein in operation, separate reflection data are obtained from each said detector, the data respectively representing a near view and a far view;

b. pattern recognition means receiving the near-view data and correlating the received image data with the projected pattern to establish a match; and

c. far-view distance determination means receiving the far-view data for fine determination of the distance from a selected baseline of points on the scanned

object illuminated by portions of the projected pattern that have been correlated with corresponding portions of the received image.

21. Scanning apparatus as defined in Claim 20, additionally comprising

a. near-view distance determination means receiving the near-view data for approximation of the distance from the selected baseline of points on the scanned object illuminated by portions of the projected pattern that have been correlated with corresponding portions of the received image; and

b. matching means for matching far-view distance data with

i. pattern data from the pattern recognition means; and

ii. near-view distance data from the near-view distance determination means;

so as to select for further processing the far-view distance data that meets or approximately meets matching criteria selected for the matching of the far-view distance data with the pattern data and the near-view distance data.

22. Scanning apparatus as defined in Claim 21, in combination with means for moving the object past the scanner in a path orthogonal to the line joining the detectors and orthogonal to the distance dimension.

23. Scanning apparatus as defined in Claim 21, in combination with triangulation computation means for computing the distance from a baseline to a series of points on the scanned object and that employs as the baseline the line joining the two cameras when a given one of said points is known to have been recognized by both detectors.

24. A method of processing reflection data obtained from scanning an object with a coded light pattern, comprising selection of data within one or more ranges established by the scanning layout and/or the angles of projection and view selected; and further processing only the selected data.

25. A method of processing reflection data obtained at two separate locations from the projection from a source onto a scanned object of a coded light pattern, comprising correlating the reflection data received at the location nearer the source with the projected pattern so as to establish a correlation between components of the reflected image of the projected pattern and points on the scanned object, approximating the distance from the said points on the scanned object to a selected baseline; and more precisely determining the distance from the said points on the scanned object to the selected baseline by triangulation computations on selected correlated data received at the location further from the source, including selecting for reliable triangulation computation only data for which the more precise distance determination is within the same selected distance range as the corresponding approximate distance determination.

26. A method of processing reflection data obtained from at least two separate light-detection locations from the reflection of an image from a scanned object of a coded light pattern projected onto the scanned object from a source of light, comprising triangulation computation of distance to an identified point on the scanned object from at least two discrete baselines, one said baseline being of a length correlatable with the distance from the source to one of the two separate locations, and the other said baseline being of a length correlatable with the distance from the source to the other of the two separate locations.

27. A method of processing reflection data obtained from two separate light-detection locations from the reflection of an image from a scanned object of a coded light pattern projected onto the scanned object from a source of light, comprising establishing the identity of scanned points from which the reflection data have been obtained at the two separate light-detection locations, and performing triangulation computation of distance to such identified points on the scanned object using as a baseline the line between the applicable detection focal points at the two separate light-detection locations.

28. A method of processing first and second sets of reflection data correlated with a selected range of pixel addresses with which the reflection data are associated, the first set of said reflection having been obtained from the reflection of at least a portion of a series of mark/space symbols projected onto a target object and being representative of the intensity of light reflected at each pixel address in the range, the marks being characterized by two or more duty-cycle values for purposes of mark recognition and identification, and the second set of data having been obtained as reflectivity data representative of the surface reflectivity of the scanned surface of the target object at each pixel address in the range, comprising compensating the first set of data using the second set of data thereby to obtain compensated data for the range of pixel addresses that reduces or mitigates the duty-cycle distortion of mark-related data induced by surface anomalies on the target object surface.